

REMARKS

Claims 5, 9, 48, and 52 have been cancelled; and amend claims 2, 8, 10, 15, 16, 45, 51, 53, 55, 57, and 59 have been amended. Support for the amendments lie in the specification and original claims as filed, as detailed in the following remarks. No new matter is added by virtue of the amendments. The following remarks are made in response to the Examiner's objections and rejections:

Applicants respectfully traverse the Examiner's indication that new claims 44 and 60 are drawn to a new restriction group. Applicants submit new claims 44 and 60 would require no additional search beyond that indicated for the polypeptides of claims 2-16 and new claims 45-59; examination of claims 45 and 60 would add no additional burden upon the examiner beyond that of the polypeptide claims; and the claims directed to antibodies which bind the polypeptides of claims 2-16 and 45-59 are not a separately patentable invention. Reinstatement of claims 44 and 60 is respectfully requested.

The Examiner objected to the Information Disclosure Statement filed 7-26-00 and 1-25-99 as failing to comply with 37 CFR § 1.98(a)(2), for lack of submission of copies of documents. Applicants submit the requirement under 37 CFR § 1.98(a)(2) was in fact met, as legible copies of all documents were submitted in related applications (e.g., USSN 28/989/299), as indicated in the submissions. However, for the Examiner's convenience, additional copies of the cited documents are submitted herewith. Review and consideration of the cited documents is requested.

Claims 10 and 53 were rejected under 35 USC § 112, second paragraph as indefinite for recitation of the term "target peptide." Applicants respectfully traverse the rejection.

The term "target peptide" as used in claims 10 and 53 would most certainly be clear to one of skill in the art in view of the disclosure throughout the specification as filed. For example, at page 24, lines 1 through 3, the term is defined: *"The term 'target peptide' refers to a peptide which can be hydrolyzed by an ACE or ACE-2 protein."* Additionally, exemplary target peptides are disclosed, which include: *"angiotensin I, kinins such as bradykinin, kinetensin, enkephalins, and neuropeptides such as substance P."* Furthermore, one of skill in the art, with the description provided for ACE2 polypeptides would be fully equipped to determine the whether any peptide is a "target peptide" which can be hydrolyzed by an ACE-2 protein. As such, Applicants submit the metes and bounds of claims 10 and 53 are in fact clear and distinctly point out the claimed subject matter, as the claims are interpreted in view of the specification. However, in an attempt to address the Examiner's concerns, Applicants have amended claims 10 and 53 to recite the term "ACE-2 target peptide." While Applicants submit the term is implicit in the claims as described above, it is believed the present claims overcome the Examiner's rejection. Reconsideration and withdrawal of the rejection is thus requested.

Claims 2-16 and 45-59 were rejected under 35 § USC 112, first paragraph as failing to comply with the written description requirement. The rejection is traversed.

The Examiner cites the MPEP factors which can be used to determine if sufficient evidence of possession of the an invention has been furnished in the disclosure of the application:

“level of skill and knowledge in the art, partial structure, physical and/or chemical properties, functional characteristics alone or coupled with a known or disclosed correlation between structure and function, and the method of making the claimed invention Disclosure of any combination of such identifying characteristics that distinguish the claimed invention from other materials would lead one of skill in the art to the conclusion that the applicant was in possession of the claimed species is sufficient.”

Applicants submit the level of skill in the art is high, and the disclosure of the application as filed provides sufficient description relating to the generation of variant sequences, it is routine in the art to construct derivatives which are at least 90% identity to a given sequence (e.g., SEQ ID NO:2), and applicants have additionally provided description in creating variants of SEQ ID NO:2 as well as polypeptides having at least 90% identity to the entire amino acid sequence set forth in SEQ ID NO:2 (see, e.g., specification last full paragraph page 43 through page 51). Still further, Applicants’ description sets forth the claimed bioactivities, as well as methods for assessing such activities (see, e.g., page 19, last paragraph through page 20; page 33, second full paragraph).

Furthermore, Applicants point out that independent claims 2, 8, 16, 45, 51, and 59 have been amended such that each independent claim recites not only homology limitations relating to structural limitations of SEQ ID NO:2 variants, but also recite such sequence have “at least one bioactivity of an ACE2 polypeptide,” thus reciting a combination of at least a partial structural features of a genus of polypeptides, as well as the biological activities of the polypeptides. Applicants thus submit the written description requirement under 35 USC § 112 has been met, and respectfully request reconsideration and withdrawal of the rejection.

Claims 2-16 and 45-59 were rejected under 35 USC § 112, first paragraph as failing to comply with the enablement requirement for isolated polypeptides having amino acid sequences of at least about 90% identity with the entire amino acid sequence set forth in SEQ ID NO:2. Applicants respectfully traverse the rejection.

Applicants submit the application as filed does in fact provide each of the necessary elements to carry out the subject matter of claims 2-16 and 45-59, and contrary to the Examiner’s assertion, guidance regarding generation of each of the possible derivatives of SEQ ID NO:2 which are at least 90% identical to SEQ ID NO:2 is provided, and/or would be well understood to one of skill in the art in view of the provided description in combination with the knowledge and skill in the art. For example, Applicants

have provided the amino acid sequence of SEQ ID NO:2. It is routine in the art to construct derivatives which are at least 90% identity to a given sequence (e.g., SEQ ID NO:2), and applicants have additionally provided description in creating variants of SEQ ID NO:2 as well as polypeptides having at least 90% identity to the entire amino acid sequence set forth in SEQ ID NO:2 (see, e.g., specification at page 29, first full paragraph through page 34, first full paragraph; and page 43, last full paragraph through page 51). Still further, Applicants' description sets forth the claimed bioactivities, as well as methods for assessing such activities (see, e.g., page 18, last paragraph through page 19; page 31, second full paragraph). The Examiner's rejection is apparently based on the numerous possibilities of various polypeptides comprising at least 90% identity to amino acid sequence of SEQ ID NO: 2 which could be generated, and testing whether these could each be assessed for biological activity. Applicants submit, however, the number of possibilities of testing alone is not sufficient to maintain the present enablement rejection, as the tools to carry out such generation and/or identification of peptides, testing of bioactivities and identification of polypeptides having at least 90% identity to amino acid sequence of SEQ ID NO:2 and having an ACE2 bioactivity are in fact readily available to those of skill in the art in view of Applicants' disclosure and the knowledge of those skilled in the art. Reconsideration and withdrawal of the rejection is thus respectfully requested.

In view of these amendments and remarks, Applicants respectfully submit that the objections and the rejections of the claims under 35 U.S.C. §§ 112 are now overcome and that this application is now in condition for allowance. Early notice to this effect is solicited. If a telephone conference would expedite the prosecution of the subject application, the Examiner is invited to call the undersigned.

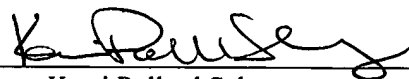
It is believed this paper is being filed timely, and no extensions of time are required. In the event any additional extensions of time are necessary, the undersigned hereby authorizes the requisite fees to be charged to Deposit Account No. 501668.

June 21, 2004

Respectfully submitted,

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